Calculation method of Margin ratio by The Financial Futures Association of Japan

I. Generation of price data	(1) Price data used for margin ratio will be provided by NEX Data Service Ltd. (NEX Data) and generation of FX Market Reference Rate will be conducted as following steps: ① For the calculation of major currency pairs, trading data traded during 180 seconds before and after JST 15:00 will collected from the FX Market Platform and the Volume Weighted Average Price (VWAP) will be calculated. ② For those currency pairs which VWAP is unavailable, NEX Data will generate price data by pre-agreed alternative method. In case of emergency such that FX Market Reference Rate is unattainable, price data will be generated in compliance with FFAJ's Emergency measures and Business Contingency Plan.
II. Calculation of figure for the last 26 weeks	(2) Calculate a natural logarithm by result for [daily VWAP]÷[Previous business day's VWAP] for the last 26 weeks from the base date (Friday). (3) Seek the standard deviation of above and multiply 2.33 in order to cover 99% of one-sided range.
III. Calculation of figure for the last 130 weeks	(4) Calculate a natural logarithm by result for [daily VWAP]÷[Previous business day's VWAP] for the last 130 weeks from the base date (Friday). (5) Seek the standard deviation of above and multiply 2.33 in order to cover 99% of one-sided range.
IV. Determination of applied margin ratio	(6) Compare the figures of above (3) and (5) and the bigger figures will be determined as margin ratio.
V. Distribution of margin ratio	(7) Distribute the margin ratio determined above (6) and leverage ratio to the public. *Margin ratio: Multiple 100 to above (6) and round up to the second decimal place.* *Leverage ratio: Multiple 100 to the above (6)'s reciprocal figure and round down to the second decimal place.*

<EXAMPLE>

Base data: Friday, 2017/02/17

Currency Pair: USDJPY

(1) Preparation for necessary price data of USDJPY.

< Calculation of figure for the last 26 weeks>

(2) 113.39 (VWAP dated 02/17) ÷ 113.86 (VWAP dated 02/16) = 0.995872124 ---- ①

Natural logarithm of above ① : LN (0.995872124) = -0.00413642 --- ②

Seek the result of Natural logarithm by the formula of [VWAP of the day ÷ VMAP of previous day] for the last 26 weeks (2016/08/22 – 2017/02/17) ---- ③

(3) Seek the standard deviation of above ③. 0.00812682 --- ④

④ x 2.33 = 0.018923519 --- ⑤

< Calculation of figure for the last 130 weeks>

(4) Seek the result of Natural logarithm by the formula of [VWAP of the day ÷ VMAP of previous day] for the last 130 weeks (2014/08/25 – 2017/02/17) ---- ⑥

(5) Seek the standard deviation of above ⑥. 0.006574288 --- ⑦

⑦ x 2.33 = 0.015318091 --- ⑧

(6) Compare above ⑤ and ⑧, and the bigger figures will be determined as margin ratio (which is the lower leverage rate)

In this case, 0.018923519 --- ⑤

(7) Above (6) x 100 = 1.8923519 and then round up to the second dismals.

The distributed figure to the public is **1.90%**.

As for Leverage ratio, above (6)'s reciprocal figure x 100 = 52.9100529 and then round down to the second dismals.

The leverage ratio is **52.63%.**

Above calculation will be applied to each currency pair.